REMARKS

In the Office Action, the Examiner indicated that claims 1 through 9 are pending in the application and the Examiner rejected all claims.

Claim Rejections, 35 U.S.C. §103

On page 2 of the Office Action, the Examiner again rejects claims 1 and 9 under 35 U.S.C. §103(a) as being unpatentable over Applicant Admitted Prior Art ("AAPA") and U.S. Patent No. 6,006,264 to Colby et al. ("Colby"), and the rejection of claims 2-8 under 35 U.S.C. §103(a) as being unpatentable over AAPA in view of Colby and U.S. Patent No. 6,240,461 to Cielsak et al. ("Cielsak").

The Present Invention

The present invention provides a system for improved load balancing in a client/server environment, comprising at least one caching/hashing switch (CHS) coupled between clients and servers in the client/server environment. The CHS stores previously-requested objects and comprises "a hashing switch coupled to said servers; and a front end cache coupled between said clients and said hashing switch; wherein object requests for objects stored in said CHS are satisfied immediately from said CHS."

In an alternative embodiment, the present invention is an improvement to a load balancing system in a client/server environment having at least one client coupled, via a network connection, to a plurality of servers, and a hashing switch coupled between said network connection and said plurality of servers. The improvement comprises "a cache coupled between said network

connection and said hashing switch, said cache storing previously requested objects and configured to satisfy requests for said previously requested objects without passing said requests to said hashing switch."

Applicant's Admitted Prior Art ("AAPA")

As set forth in the specification, applicant admits that, among others, server switches, hashing switches, caching, content-based routing, and load balancing are known.

U.S. Patent No. 6,006,264 to Colby et al.

U.S. Patent No. 6,006,264 to Colby et al. ("Colby") teaches a content-aware flow switch that intercepts a client content request in an IP network, and transparently directs the content request to a best-fit server.

U.S. Patent No. 6,240,461 to Cielsak et al.

U.S. Patent No. 6,240,461 to Cielsak et al. ("Cielsak") teaches a method for facilitating data transmission in a network. The system of Cielsak has a client platform coupled to a router, which is in turn coupled to a "destination platform" via a network. Caching engines are provided after the router, relative to the client platform/router connection, and the router redirects (i.e., switches) data traffic to one of the caching engines. If the data requested in the traffic is cached in the caching engine to which it was directed, it is served from the caching engine. If the data requested is not cached on the caching engine to which it was directed, then the caching engine

opens a connection with the destination platform, downloads and caches the information, and then served it to the requesting client.

The Examiner has not Established a *prima facie* Case of Obviousness

As set forth in the MPEP:

> To establish a *prima facie* case of obviousness, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skilled in the art, to modify the reference or to combine reference teachings.
> MPEP 2143

As noted above, the present invention includes a "caching/hashing switch (CHS) coupled between clients and servers in said client/server environment". The CHS includes "a hashing switch coupled to said servers; and a front end cache coupled between said clients and said hashing switch; wherein object requests for objects stored in said CHS are satisfied immediately from said CHS."

This configuration, where there is a client-cache-switch-server arrangement, is neither taught nor suggested by any of AAPA, Colby, and/or Cieslak, taken alone or in combination. Neither Colby nor Cieslak identify or address the problem solved by the present invention, that is, minimizing the burden on a hashing switch and a server farm. In the present invention, if an object is cached, it is immediately served back to the client, and thus the object does not have to be re-hashed and the server does not have to re-serve it. Neither Colby nor Cieslak identify this problem and neither suggest modifying their teachings to arrive at the claimed invention.

The Examiner is essentially arguing that the mere existence of hashing switches and the mere existence of caches, both of which are acknowledged as being known, and the teaching of the content-aware flow switch of Colby, makes it obvious to combine them, and that such combination would achieve the present invention. This piecemeal approach is a clear application of hindsight; nothing in Colby even remotely suggests the placing of a front-end cache in front of a hashing switch, and immediately serving objects from the cache back to the client when they are stored in the cache. The Examiner has instead gone against the directive from the Federal Circuit in *In re Fritch*:

> "[I]t is impermissible to use the claimed invention as an instruction manual or "template" piece together the teachings of the prior art so that the claimed invention is rendered obvious...." 977 F.2d 1260 (Fed.Cir. 1992).

Nothing in the references cited by the Examiner, nor in the AAPA, suggests the present claimed invention, where client requests arrive at the cache first and, if a request is available to be served from the cache (because it has been requested previously and is stored in the cache), it is served immediately back to the client without the need for any switching to occur. By handling previously requested requests using a front-end cache and then utilizing hashing techniques for only the un-cached requests, the load-balancing for the remaining requests can be maximized. The Examiner has failed to show the necessary suggestion in the prior art to modify the teachings to achieved claimed a result of the present invention. Even if the teachings and suggestions of the cited references *were* combined, they still would not result in the claimed invention, since there would never be a configuration where the cache is situated between the client and the hashing switch.

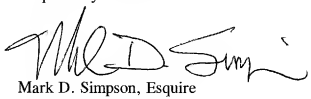
Each of the pending claims specifically recite the novel and non-obvious arrangement set forth above, in one form or another. None of the cited prior art teach these novel features, and none of the cited prior art contains any suggestion of such a combination. Without such a suggestion, it is inappropriate to reject the claims as being obvious based on the cited prior art. Accordingly, the Examiner is respectfully requested to reconsider and withdraw the rejection of claim 1-9 under 35 U.S.C. §103.

Conclusion

The present invention is not taught or suggested by the prior art. Accordingly, the Examiner is respectfully requested to reconsider and withdraw the rejection of the claims. An early Notice of Allowance is earnestly solicited.

The Commissioner is hereby authorized to charge any fees associated with this communication to Deposit Account No. 09-0461.

Respectfully submitted



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